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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/737,783	12/15/2000	Perry Wang	42390P9634	2478

7590

05/31/2005

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EXAMINER

HUISMAN, DAVID J

ART UNIT

PAPER NUMBER

2183

DATE MAILED: 05/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/737,783

Applicant(s)

WANG ET AL.

Examiner

David J. Huisman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 June 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-16 have been examined.

Papers Submitted

2. It is hereby acknowledged that the following papers have been received and placed of record in the file: Amendment as received on 3/24/2005.

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
4. The abstract of the disclosure is objected to because it does not summarize applicant's invention. Applicant should rewrite the abstract such that it includes information about deferring renaming of an instruction that consumes a destination defined by one of multiple predicated instructions, and that this deferment is achieved through the injection of a select uop. The examiner believes that applicant should focus on this material. Correction is required. See MPEP § 608.01(b).
5. The disclosure is objected to because of the following informalities: On page 5, line 4, the phrase "is disclosed" should be removed.

Appropriate correction is required.

Drawings

6. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: On page 8, line 22, applicant refers to pipeline 200. However, reference number 200 is not illustrated in Fig.2.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

7. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description:

In Fig.1C, the examiner has been unable to find reference numbers 184 and 195 in the specification.

In Fig.2, the examiner has been unable to find reference numbers 205, 215, 220, 225, and 230 in the specification.

In Fig.2A, the examiner has been unable to find reference numbers 250, 252, 254, and 262 in the specification.

In Fig.4, the examiner has been unable to find reference numbers 420 and 440 in the specification.

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In Fig.5, the examiner has been unable to find reference numbers 520, 530, and 540 in the specification.

In Fig.6, the examiner has been unable to find reference numbers 605, 610, 615, 620, 625, and 630 in the specification.

In Fig.7, the examiner has been unable to find reference number 700 in the specification.

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

8. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "180" has been used to designate both the left portion of Fig.1C and the compare step (p9, p3 = cmp) in the left portion of Fig.1C. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in

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the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

9. The drawings are objected to because of the following minor informalities:

In Fig. 1C, why does step 180 include predicates p9 and p3, but after conversion, steps 190 and 195 show predicates p5 and p6. Should p5 and p6 be replace with p9 and p3, respectively?

In Fig. 3, Fig. 4, Fig. 5, Fig. 7, Fig. 9, and Fig. 10, the examiner requests that applicant increase the size of the text because it is very difficult to read.

In Fig. 10, the multiplexers, from left to right, should be renumbered as 1010, 1020, and 1030, respectively.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet"

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pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

10. The informal drawings (specifically, Fig. 11 and Fig. 12A-G) are not of sufficient quality to permit examination. The examiner is unable to see a large portion of the text in these figures. Accordingly, replacement drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to this Office action. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action.

Applicant is given a TWO MONTH time period to submit new drawings in compliance with 37 CFR 1.81. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a). Failure to timely submit replacement drawing sheets will result in ABANDONMENT of the application.

Claim Objections

11. Claim 8 is objected to because of the following informalities: Insert --of-- before "status bits". Appropriate correction is required.

12. Claim 9 is objected to because of the following informalities: In line 5, replace "an dynamic" with --a dynamic--. In line 10, replace "the a" with --a--. Appropriate correction is required.

Claim Rejections - 35 USC § 112

13. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

14. Claims 1-16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

15. Claim 1 recites “a plurality of register renaming units to rename at least one register corresponding to the predicated instructions after the common instruction is executed”. It is not clear to the examiner how this is possible. Looking at applicant’s Fig.2 and Fig.6, it can be seen that the registers for the predicated “add” instructions are renamed before the common “mov” instruction is executed. In addition, from Fig.6, the registers for the common instruction are also renamed before it is executed (this is clear because by the time the “mov” reaches the execution stage, it’s registers have been renamed). If they were not renamed prior to execution, then how does the instruction execute, since it would be accessing the wrong register(s)? If this concept is in fact enable by the specification, it is asked that applicant point to the portion of the specification where the concept is disclosed and enabled and where it is illustrated (if it is not illustrated, then applicant must provide an appropriate drawing).

16. Claim 9 recites “executing a consumer instruction before renaming the destination register of each of the plurality of predicated instructions”. It is not clear to the examiner how this is possible from applicant’s specification. Looking at applicant’s Fig.1C, Fig.2, and Fig.6, it

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can be seen that the destination registers for the predicated “add” instructions are renamed before the consumer “mov” instruction is executed. Fig.6 specifically shows that the consumer instruction (mov) is executed after the renaming of the destination registers of the predicated instructions. It is not clear how a consumer instruction can execute correctly without knowing where to get the source data from (which comes from the destination register of the predicated instruction). If this concept is in fact enable by the specification, it is asked that applicant point to the portion of the specification where the concept is disclosed and enabled and where it is illustrated (if it is not illustrated, then applicant must provide an appropriate drawing).

17. Claim 14 recites “a plurality of register rename units to rename at least one register corresponding to a predicated instruction after the dependent instruction is executed.” It is not clear to the examiner how this is possible from applicant’s specification. Looking at applicant’s Fig. 1C, Fig.2, and Fig.6, it can be seen that the destination registers for the predicated “add” instructions are renamed before the dependent “mov” instruction is executed. Fig.6 specifically shows that the dependent instruction (mov) is executed after the renaming of the destination registers of the predicated instructions. It is not clear how a dependent instruction can execute correctly without knowing where to get the source data from (which comes from the destination register of the predicated instruction). If this concept is in fact enable by the specification, it is asked that applicant point to the portion of the specification where the concept is disclosed and enabled and where it is illustrated (if it is not illustrated, then applicant must provide an appropriate drawing).

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18. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

19. Claims 2-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

20. Claim 2 recites the limitation "the register renaming unit" in line 1. There is insufficient antecedent basis for this limitation in the claim because its parent claim specifies the existence of a plurality of register renaming units. Claim 2 also recites the limitation "the pipeline instruction" in line 2. There is insufficient antecedent basis for this limitation in the claim.

21. Claim 8 is indefinite because it is not clear how each one of the status bits has a ready bit and a committed bit. That is, applicant appears to be claiming that each single bit is made up of two bits, and the examiner is not sure how this is possible.

22. Claim 9 recites the limitation "the register corresponding to the select-uop " in line 12. There is insufficient antecedent basis for this limitation in the claim. Claim 9 also recites the limitation "the destination register" in lines 14. There is insufficient antecedent basis for this limitation in the claim because it is not clear if applicant is referring to the destination register if the select-uop instruction, the common defined destination register, or the renamed destination register.

23. Claim 10 recites the limitation "the each one of the plurality of select-uops" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim as applicant has not previously claimed a plurality of select-uops.

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24. Claim 14 recites the limitation "the register renaming unit" in line 12. There is insufficient antecedent basis for this limitation in the claim because a plurality of register renaming units was previously mentioned.

25. Claim 16 recites the limitation "the register renaming unit" in line 1. There is insufficient antecedent basis for this limitation in the claim because a plurality of register renaming units was previously mentioned. Claim 16 further recites the limitation "the plurality of source registers" in line 2. There is insufficient antecedent basis for this limitation in the claim. Claim 16 also recites the limitation "the pipeline instruction" in line 2. There is insufficient antecedent basis for this limitation in the claim. Finally, claim 16 recites the limitation "the destination register" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim because a plurality destination registers was previously mentioned.

Conclusion

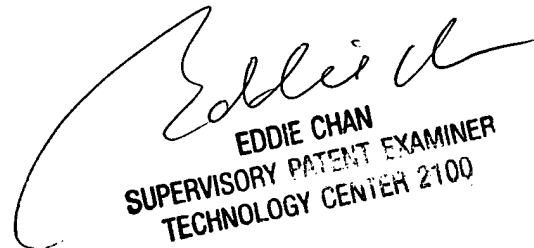
Any inquiry concerning this communication or earlier communications from the examiner should be directed to David J. Huisman whose telephone number is (571) 272-4168. The examiner can normally be reached on Monday-Friday (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Chan can be reached on (571) 272-4162. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DJH
David J. Huisman
May 20, 2005



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